

CLAIMS

1. A piezoelectric resonator element package, comprising a base that holds a piezoelectric resonator element on the front and back sides of which
5 are formed drive electrodes, and a cap for hermetically sealing the piezoelectric resonator element, with the piezoelectric resonator element being held on an internal bottom surface of the base,

wherein four electrode pads that electrically connect to drive electrodes of the piezoelectric resonator element are formed on the internal
10 bottom surface of the base,

at least one of the four electrode pads has the different potential, and avoidance means is provided for avoiding electrical connection between the electrode pad/pads with the different potential and the other electrode pads with the same potential.

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2. The piezoelectric resonator element package, wherein the four electrode pads are formed in the corners of the internal bottom surface of the base, and the four electrode pads consist of a first electrode pad, second electrode pad, third electrode pad, and fourth electrode pad,

20 the first electrode pad and the second electrode pad are formed along a predetermined specific side of the internal bottom surface of the base,

the first electrode pad and the third electrode pad are formed along one of the two sides that are perpendicular to the specific side,

25 the second electrode pad and the fourth electrode pad are formed along the other side that is perpendicular to the specific side,

the first electrode pad and the second electrode pad have the different potential,

the first electrode pad and the third electrode pad are connected by a first connecting electrode and have the same potential,

30 the second electrode pad and the fourth electrode pad are connected

by a second connecting electrode and have the same potential, and

the avoidance means comprises bumps that are formed on the first to fourth electrode pads and are smaller than the electrode pads, and at least one of these bumps is formed at a location that does not overlap with the drive electrode formed on an opposite side opposed to the base of the piezoelectric resonator element.

3. The piezoelectric resonator element package according to Claim 2, wherein the base is consisted of a ceramic material, and the electrode pads are formed by metallization, and bumps of the same material as the electrode pads are provided on the electrode pads.

4. The piezoelectric resonator element package according to Claim 2 or 3, wherein the electrode pads, the bumps, and the first and second connecting electrodes are formed in point symmetry, with the center point being the center of the internal bottom surface of the base.

5. The piezoelectric resonator element package according to Claim 1, wherein the avoidance means is configured such that electrode pad formation regions are formed in a corners of an internal bottom surface of the base for the formation of the four pads, an area capacity of the electrode pads fits within a four electrode pad formation regions for forming the electrode pads respectively, and the area capacity of at least one of the electrode pads is set to be less than the area capacity of the other electrode pads,

the four electrode pads consist of a first electrode pad, second electrode pad, third electrode pad, and fourth electrode pad,

the first electrode pad and the second electrode pad are formed along a predetermined specific side of the internal bottom surface of the base,

the first electrode pad and the third electrode pad are formed along

one of the two sides that are perpendicular to the specific side,

the second electrode pad and the fourth electrode pad are formed along the other side that is perpendicular to the specific side,

the first electrode pad and the second electrode pad have the different
5 potential,

the first electrode pad and the third electrode pad are connected by a first connecting electrode and have the same potential, and

the second electrode pad and the fourth electrode pad are connected by a second connecting electrode and have the same potential.

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6. The piezoelectric resonator element package according to Claim 5,

wherein the electrode pad with the smaller area capacity is formed away from the other electrode pad formation regions within the electrode pad formation region in which this electrode pad is formed.

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7. The piezoelectric resonator element package according to any of Claims 2 to 6,

wherein the first connecting electrode and the second connecting electrode are formed with substantially the same area capacity.

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8. A piezoelectric resonator, provided with the piezoelectric resonator element package according to any of Claims 1 to 7 and a piezoelectric resonator element on the front and back sides of which are formed drive electrodes,

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wherein the piezoelectric resonator element is held on the internal bottom surface of the base, and the electrode pads of the base and the drive electrodes of the piezoelectric resonator element are electrically connected.

9. The piezoelectric resonator according to Claim 8, wherein a front-side
30 extraction electrode that is extracted from the drive electrode to both end

regions at predetermined one end is formed on the front side of the piezoelectric resonator element,

a back-side extraction electrode that is extracted from the drive electrode to both end regions at the other end opposite from the one end is
5 formed on the back of the piezoelectric resonator element,

the front-side extraction electrode and the electrode pads are electrically connected, and

the back-side extraction electrode is electrically connected to the electrode pads that have the different potential from that of the electrode
10 pads joined to the front-side extraction electrode.